

WATERWAYS

Upper Mississippi Waterway Association
PO Box 7006
St. Paul, MN 55107
651-776-3108 - umwa@qwest.net



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Despite cold December

Lock 3 overhaul on schedule

Corps of Engineers Structural Engineer Jim Ulrick says the work being done at Lock and Dam 3, near Red Wing, Minn., is like a major overhaul on a car engine.

"We do regular maintenance on the locks that's sort of like an oil change and a car wash," Ulrick says, "This is like a major overhaul when you take the head off the engine and put in new rings and do other major work."

Ulrick and Project Manager Capt. Adam Rasmussen say the dewatering and repair work now underway at the lock and dam requires a lot of pre-planning and then a lot of lifting power once it's underway. One of the three cranes involved, the Corps of Engineers crane Sewell, traveled 600 river miles to help with the really heavy lifting. Another crane was lowered into the lock on an equipment barge that will lift it out again when the project is done. Analysis showed that because it is owned by the Corps, it's more cost effective to bring up Sewell than leasing a contractor's crane.

March Wrapup

Ulrick says the goal is to have things wrapped up by March 1, but that the official opening to traffic is set for March 15.

Although some were found in the chamber and its machinery, Zebra Mussels aren't a big problem this year at Number 3. Rasmussen says one of the tainter valves was so covered with the mussels that crews had to scrape and sandblast the surfaces before working on them, but other mussels that won't interfere with

operations were left to die in place.

In addition to sandblasting and repainting, major work in-



cludes checking welds and rivets, concrete repair and replacement of timbers on miter gates.

Small drop in 2007

Lockmasters reported 12,107 vessels and 7,065,758 tons of cargo went through the lock in 2007, down just slightly from 2006. Broken down, the figures show 1,087 industry vessels, 10,847 recreational craft and 173 "other" vessels such as government boats.

Ag industry experts say the drop was attributable in part to corn demand at ethanol plants and lower rail rates to the west coast. They say that higher fuel prices and lower ethanol margins may bring

more tonnage to the river this year.

Because of its infamous outdraft issues, the Corps will be placing real-time flow meters above and below the lock to transmit information to pilots approaching the lock. A helper boat will continue to assist when needed.

Big project 2010

Authorization for the larger and much needed work on the Wisconsin embankments was included in the recently passed WRDA, but will need to be funded by Congress. Completion of the embankment project is set for 2010.

(Above) Ulrick and Rasmussen on temporary walkway above upper miter gate (Below) Ulrick and visitor walk on lock floor near equipment and refuse barges



Executive Director's Report...

Navigating the Drought

The specter of diverting fresh water to arid regions is gaining attention in the general press and promises to challenge navigation.

Throughout this decade, the media has been awash with reports of too much or too little water and all manner of natural disasters attributed to climate change, with droughts getting the most attention.

Drought is commonplace

High temperatures and low moisture seem to be all too common around the country: Florida's reservoirs are badly depleted and suffer from infusion of saltwater. Georgia missed almost an entire season of rainfall and ended up in court when Florida tried to pinch some of Atlanta's dwindling water supply. Almost one-half of Kentucky's otherwise lush counties either ran out of water or were on the verge of doing so before heavy rains brought relief.

In the Northwest prized for its cool, rainforest climate, farms and wildlife were left withering and dry while on the wet side of the Cascades, Seattle's demand for water continues to outpace supply, raising the prospect of shortages within 10 years.

And, serious water shortages are expected for the desert Southwest and portions of the otherwise well-watered Midwest within a generation's time.

Solutions sought

Recognizing that necessity spurs the imagination, some arid cities have stretched their inventiveness (and pocketbooks) to develop solutions to their water shortage problems.

The December issue of *River Crossings*, reports that a city in the shadow of Denver is considering an idea used in Europe: dig wells alongside the river and pull river water up through them, using the gravel of the riverbank as a natural filter. Aurora has water rights on the South Platte River, and as other Colorado cities do, it pours its

treated wastewater back into that river, a practice that gives the river a steady, dependable flow. However, to get additional water city leaders reason they could legally go 20 to 30 miles downstream, purchase agricultural land near the river, install wells, retrieve their own wastewater then pump it back to the city for purification and further use, a process they expect could be repeated ad infinitum.

Treated wastewater – an asset

According to water managers, a drop of the South Platte used by Aurora residents then treated and returned to the river, would find its way back to the city's taps as a half-drop in 45-60 days, a quarter-drop 45-60 days after that and so on. "For every drop the town used from the South Platte, over time it would almost – as all the fractional drops added up – get another."

This system is marketed under the name of "Prairie Waters" and will cost almost \$1 billion making it one of the most expensive infrastructure projects in the country.

Following that catchphrase Las Vegas is considering several ways to water their modern day gold mine. One is to construct a multibillion-dollar pipeline to east-central Nevada, extract ground water and transport it back to Las Vegas. This is an expensive yet promising solution because, in Vegas, money is more plentiful than water.

Expensive water trades

Their wealth and cash flow, according to the article, allows Vegas to pursue a second possibility. This one is a sophisticated trading scheme where Las Vegas might pay for a desalination plant on the Pacific Coast that would convert seawater to potable water. In the deal, California and Mexico, as beneficiaries of the seawater conversion plant, would agree to turn over their claims on Colorado River water to Las Vegas.

In past years, various proposals have been made to transport water from Canada or the Great Lakes to the arid Southwest. Concerned that the Prairie Waters idea (discussed above) might resurface elsewhere in a dryer and

more populated region, Great Lake states are currently working to protect their fresh water from outside exploitation, particularly by states that are already eyeing the Great Lakes for their water supply. The Governor of New Mexico has already suggested that water from the lakes could be pumped to thirsty states like his in the future.

Divert Missouri River

Some lower Missouri River states have expressed concern that water from the Mighty Mo could be similarly diverted to the dry Southwest by upper Missouri River states or Indian tribes. Such an act would certainly create an ugly mood as lower Missouri River states already feel the economic pain from reduced barge transportation and water flow made in the name of ecosystem preservation.

In past years, various schemes to move water to arid regions have created heated controversy. River Crossings reported that beyond the environmental implications and construction costs (probably hundreds of billions of dollars), such continental-scale plumbing would require stupendous amounts of electricity.

Meanwhile, continued the article, it is a perverse side effect of global warming that we may have to emit large volumes of carbon dioxide to obtain the clean water that is becoming scarcer because of the carbon dioxide we've already put into the atmosphere.

Clearly, the navigation industry faces challenges as it works to develop and fund ways to successfully navigate the drought.

Duluth TWIC open

The TSA opened a TWIC office in Duluth, Minn., on Dec. 28. It joins the Minneapolis and St. Paul offices already open. UMWA has posted information on our web site, www.umwa.us.

TWIC information is available by calling 1-866-347-8942 or emailing credentialing@dhs.gov.